

A1
cont.

wherein R¹ is a hydrogen atom or an alkyl group having 1 to 5 carbon atoms; and R² is an alkyl group having 1 to 20 carbon atoms.

A2

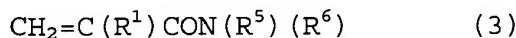
4. (Amended) The water-based ink according to any one of claims 1 to 3, wherein the graft copolymer has a nonionic polymer side chain (R) comprising:

(I) a polymer made of at least one monomer represented by the formula (2) :



wherein R¹, R³ and R⁴ are as defined above; and n is a number of 1 to 60;

(II) a polymer made of at least one monomer represented by the formula (3) :



wherein R¹ is as defined above; and each of R⁵ and R⁶ is independently a hydrogen atom or an alkyl group having 1 to 5 carbon atoms;

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(III) a copolymer made of at least one monomer represented by the formula (2) and at least one monomer represented by the formula (3); or
(IV) a group represented by the formula (4):



wherein R³ and R⁴ are as defined above; and m is a number of 3 to 60.

A³
6. (Amended) The water-based ink according to claim 5, wherein the polymer (S) is a polymer having an initiator structure prepared by converting to an initiator structure an initiator precursor structure of a polymer (T) having an initiator precursor structure which is convertible to an initiator structure, and the polymer (T) is a homopolymer made of a monomer (n) having an initiator precursor structure, or a copolymer of the monomer (n) with a monomer (o) copolymerizable with the monomer (n).

Please add the following claims:

A⁴
10. (New) The water-based ink according to claim 1, wherein the content of the colorant of said coloring material (A) is 1 to 50% by weight of said coloring material (A).

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Art.

11. (New) The water-based ink according to claim 1, wherein said acrylic polymer side chain (P) has a molecular weight of 300 to 20,000.

12. (New) The water-based ink according to claim 1, wherein said acrylic polymer side chain (P) is a polylauryl methacrylate side chain or a polyisobutyl methacrylate side chain.

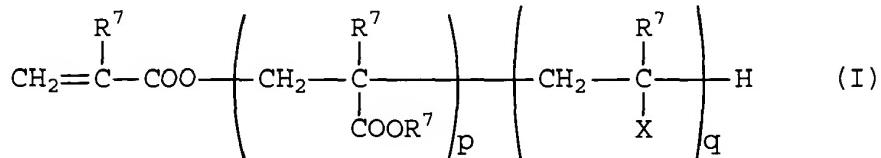
13. (New) The water-based ink according to claim 1, wherein the content of said acrylic polymer side chain (P) is 10 to 35% by weight of said graft copolymer.

14. (New) The water-based ink according to claim 4, wherein said nonionic polymer side chain (R) has a molecular weight of 300 to 10,000.

15. (New) The water-based ink according to claim 4, wherein the content of said nonionic polymer side chain (R) is 10 to 35% by weight of said graft copolymer.

16. (New) The water-based ink according to claim 2, wherein the number-average molecular weight of said (meth)acrylate macromer (a) is from 1,000 to 10,000.

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17. (New) The water-based ink according to claim 2, wherein said (meth)acrylate macromer (a) is a compound represented by formula (I):



wherein each of R^7 is independently a hydrogen atom or a hydrocarbon group having 1 to 12 carbon atoms; X is at least one group selected from the group consisting of $-\text{COOR}^7$ (R^7 is defined as above), an aromatic group having 6 to 12 carbon atoms, nitrile group and $-\text{OCOCH}_3$; and each of p and q is an integer satisfying the relationship p/q (molar ratio) of 6/4 to 10/0 and a number-average molecular weight of 1000 to 10,000.

18. (New) The water-based ink according to claim 1, wherein the aqueous dispersion is an aqueous dispersion of polymer particles of the graft copolymer containing the coloring material.

19. (New) The water-based ink according to claim 1, wherein the graft copolymer is prepared by polymerizing a monomer having an amino group, diazoating the resulting polymer to introduce an azo initiator structure into the polymer, and polymerizing an acrylate monomer using the polymer as an initiator.

A4
COP 20. (New) The water-based ink according to claim 1, wherein the graft copolymer is prepared by copolymerizing methacrylic acid chloride and a monomer copolymerizable with the methacrylic acid chloride, or copolymerizing an acid monomer and a monomer copolymerizable with the acid monomer; converting the acid group of the resulting graft copolymer to an acid chloride group with a chlorinating agent to give a polymer having an acid chloride group which is to be a main chain; treating the polymer with an alcohol peroxide to convert the acid chloride group to peroxide initiator group; and polymerizing the resulting polymer with an acrylate monomer.
